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ABSTRACT

This book is a compilation of recent research on the development of multiplicative concepts. The sections and chapters are: (1) Theoretical Approaches: "Children's Multiplying Schemes" (L. Steffe), "Multiplicative Conceptual Field: What and Why?" (G. Vergnaud), "Extending the Meaning of Multiplication and Division" (B. Greer); (2) The Role of the Unit: "Ratio and Proportion: Cognitive Foundations in Unitizing and Norming" (S. Lamon), "Units of Quantity: A Conceptual Basis Common to Additive and Multiplicative Structures" (M. Behr, G. Harel, T. Post, and R. Lesh); (3) Ratio and Rate: "The Development of the Concept of Speed and Its Relationship to Concepts of Rate" (P. Thompson), "Missing-Value Proportional Reasoning Problems: Factors Affecting Informal Reasoning Patterns" (J. Kaput and M. West); (4) Multiplicative Worlds: "Splitting, Similarity, and Rate of Change: A New Approach to Multiplication and Exponential Functions" (J. Confrey), "Multiplicative Structures and the Development of Logarithms: What Was Lost by the Invention of Functions" (E. Smith & J. Confrey); (5) Intuitive Models; "The Impact of the Number Type on the Solution of Multiplication and Division Problems: Further Investigations" (G. Harel, M. Behr, T. Post, and R. Lesh); and (6) Summary: "Multiple Views of Multiplicative Structures" (T. Kieren). Author and subject indexes are included. (MKR)

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